

What is claimed is:

- 1 1. An apparatus comprising:
2 an input transistor and a second transistor coupled as a Darlington pair; and
3 a bias circuit to increase a collector-to-emitter bias current in the first
4 transistor.
- 1 2. The apparatus of claim 1 wherein the bias circuit comprises a voltage
2 controlled current source.
- 1 3. The apparatus of claim 1 wherein the bias circuit comprises an operational
2 amplifier coupled to maintain a substantially constant base voltage on the second
3 transistor.
- 1 4. The apparatus of claim 1 further comprising a cascode transistor coupled
2 between an upper power supply node and collectors of the input and second
3 transistors.
- 1 5. The apparatus of claim 4 further comprising a second bias circuit to bias the
2 cascode transistor.
- 1 6. The apparatus of claim 1 further comprising a third bias circuit to apply a
2 bias voltage to a base of the input transistor.
- 1 7. The apparatus of claim 6 wherein the input transistor comprises a
2 heterojunction bipolar transistor.
- 1 8. The apparatus of claim 6 wherein the input transistor comprises an Indium
2 Phospate transistor.

- 1 9. The apparatus of claim 1 wherein the bias circuit comprises a digital-to-
2 analog converter.
- 1 10. The apparatus of claim 1 further comprising an inductor coupled to a
2 collector of the second transistor.
- 1 11. The apparatus of claim 1 further comprising an inductor coupled to an
2 emitter of the second transistor.
- 1 12. An apparatus comprising:
2 an amplifier including an input transistor and a second transistor coupled as
3 a Darlington pair;
4 a controllable bias circuit coupled to an emitter of the input transistor; and
5 a control circuit to influence operation of the controllable bias circuit.
- 1 13. The apparatus of claim 12 further comprising a second controllable bias
2 circuit coupled to a base of the input transistor.
- 1 14. The apparatus of claim 12 wherein the controllable bias circuit comprises an
2 operational amplifier coupled as an error amplifier.
- 1 15. The apparatus of claim 14 further comprising a low pass filter between an
2 output of the operational amplifier and the emitter of the input transistor.
- 1 16. The apparatus of claim 12 wherein the control circuit includes a digital-to-
2 analog converter.
- 1 17. The apparatus of claim 12 wherein the control circuit includes a processor.

- 1 18. The apparatus of claim 12 further comprising a cascode transistor coupled
2 between an upper power supply node and a collector of the input transistor.
- 1 19. The apparatus of claim 18 further comprising a controllable bias circuit
2 coupled to a control node of the cascode transistor.
- 1 20. The apparatus of claim 19 wherein the control circuit is coupled to influence
2 operation of the controllable bias circuit for the cascode transistor.
- 1 21. The apparatus of claim 19 further comprising an automatic gain control
2 circuit coupled between an output of the amplifier and the controllable bias circuit
3 for the cascode transistor.
- 1 22. An electronic system comprising:
2 an antenna;
3 an amplifier coupled to the antenna, the amplifier including an input
4 transistor and a second transistor coupled as a Darlington pair;
5 a controllable bias circuit coupled to an emitter of the input transistor; and
6 a control circuit to influence operation of the controllable bias circuit.
- 1 23. The electronic system of claim 22 further comprising a second controllable
2 bias circuit coupled to a base of the input transistor.
- 1 24. The electronic system of claim 22 wherein the controllable bias circuit
2 comprises an operational amplifier coupled as an error amplifier.
- 1 25. The electronic system of claim 22 wherein the control circuit comprises a
2 processor.

1 26. A method comprising increasing a bias current in an input transistor of a
2 Darlington pair by providing a current path from, and a voltage path to, an emitter
3 of the input transistor.

1 27. The method of claim 26 further comprising:
2 applying a reference signal to a base of the input transistor; and
3 measuring an output voltage of the Darlington pair.

1 28. The method of claim 27 further comprising modifying a bias voltage applied
2 to the base of the input transistor.

1 29. The method of claim 27 wherein increasing a bias current comprises
2 changing a bias voltage on a voltage controlled current source.

1 30. The method of claim 27 further comprising modifying a bias voltage on a
2 cascode transistor coupled between an upper power supply node and the Darlington
3 pair.